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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,757	07/12/2006	Mikio Kasai	0171-1289PUS1	6043
2292	7590	08/27/2009	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				FANG, SHANE
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
08/27/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/585,757	KASAI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	SHANE FANG	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 17 July 2009.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-34 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-5, 10, 25-34 is/are rejected.  
 7) Claim(s) 6-9 and 11-24 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/12/06, 10/12/06, 09/20/07</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

Some on X references on ISP have been used for 102 rejections.

### ***Election/Restrictions***

Applicant's arguments, with respect to the previous restriction requirement have been fully considered and persuasive. The previous restriction requirement over claims 1-34 have been withdrawn.

### ***Claim Rejections - Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 21-24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 15-17 of copending Application No. 10/588232.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10/588232 discloses an electrode composing the polyaminoquinoxaline (claims 1 and 15-17) that meets structures recited in instant claims 21-24.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 25-34 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 25, 28-29, and 30-34 recites the limitation "polyaminoquinoxaline" referring to claim 1. There is insufficient antecedent basis for this limitation in the claim. Claim 1 defines merely aminoquinoxaline.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

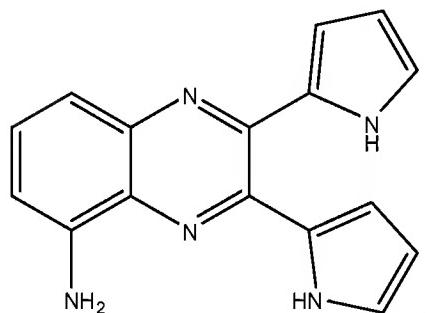
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by Sergeev (SU 592823) listed on IDS.

As to claim 1, Sergeev discloses a 5-amino-2,3-dimethylquinoxaline that reads on the structures in claim 1 (title).

7. Claim 1, 4, and 25-27 rejected under 35 U.S.C. 102(b) as being anticipated by Volf et al. (Solid State Ionics ,154-155, 2005, Pg. 57-63) listed on IDS.

As to claim 1, 4, and 25, Volf et al. discloses films (title) prepared from 2,3-dipyrrole-2yl-5-aminoquinoxaline having the following structure that reads on the structures in claim 1 and 4 (Pg. 58, bottom of Col. 1):

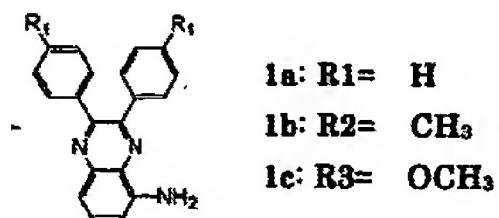


Volf et al. is silent on film preparation methods as recited in claims 26-27. However, claims 26-27 are product-by-process claims that are limited by and defined by the product. Determination of patentability is based on the product itself, not on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. **In re Thorpe**, 777 F. 2d 695, 698,277 USPQ 964,966 (Fed. Cir. 1985). See MPEP § 2113.

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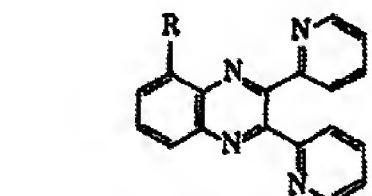
8. Claim 1-2 rejected under 35 U.S.C. 102(b) as being anticipated by Furusho et al. (Journal of Photopolymer Science and Technology Volume 15, 2002, Pg. 133-138) listed on IDS.

As to claim 1-2, Furusho et al. discloses a compound of aminoquinoxaline having the following structure that reads on the structures in claim 1 and 2 (Pg. 299, Scheme 1):



9. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by Pfeiffer et al. (JACS, vol. 31, no. 10, 1966, 3384-3390) listed on IDS.

As to claim 1, Albibi et al. discloses a compound of aminoquinoxaline having the following structure that reads on the structures in claim 1 (R=NH<sub>2</sub>, Pg. 3386, col.1):



**XXIVa,** R = NO<sub>2</sub>  
**b,** R = NH<sub>2</sub>  
**c,** R = NHCOCH<sub>3</sub>

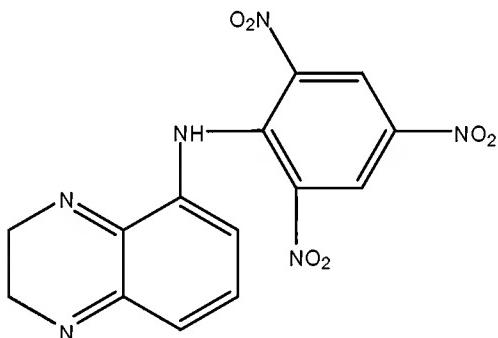
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10. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by Platt et al. (JACS, vol. 429, 1948, Pg. 2129-2134) listed on IDS.

As to claim 1, Platt et al. discloses a 5-aminoquinoxaline that reads on the structures in claim 1 (P. 2131, Table 1).

11. Claim 1 and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Nowak et al. (Database CAPLUS on STN, AN 1997:615604, DN 127: 293190, Vol. 93, No. 6, 22-28, 1996) listed on IDS.

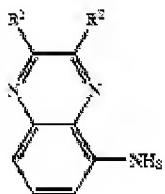
As to claim 1 and 10, Nowak et al. discloses a species of aminoquinoxaline having the following structure that reads on claim 1 and 10 (Pg. 2, structure 3):



12. Claim 1-5 and 25-34 rejected under 35 U.S.C. 102(b) as being anticipated by Nagasaki et al. (US 20030215701).

Nagasaki et al. discloses an aminoquinoxaline compound with the following generic formula [0049]:

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When  $\text{R}^1=\text{R}^2=\text{phenyl}$  ([0031]), the disclosed structure meets claims 1-2. When  $\text{R}^1=\text{R}^2=\text{naphthyl}$  ([0032]), the disclosed structure meets claim 3. When  $\text{R}^1=\text{R}^2=\text{pyrrolyl}$  ([0033]), the disclosed structure meets claim 4. When  $\text{R}^1=\text{R}^2=1,2-\text{CH}_2\text{CN}$  substituted phenyl ([0034]), the disclosed structure meets claim 5.

As to claims 25-34, Nagasaki et al. discloses polyaminoquinoxaline, which is prepared by use of aminoquinoxaline monomer as recited in claim 1, can be used in forms of films formed by spin coating (claim 10-11) or compression molding and molds in area of electrochromic device, semiconductor, solar cell, organic electroluminescence device, non-linear material, p-type or n-type semiconductor by oxidizing or reducing the compounds through the use of an oxidant or a reducing agent or through electrochemical doping ([0056]). One of ordinary skill in the art would at once envisaging making solar cell comprising p-type or n-type semiconductor as recited in claims 32.

### ***Allowable Subject Matter***

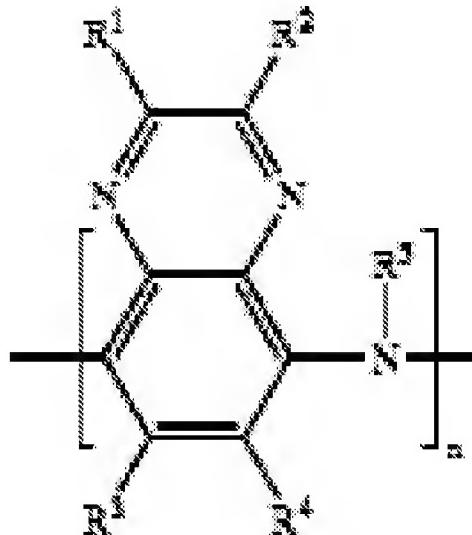
13. Claim 6-9 and 11-24 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Claims 6-9 and 11-20 allowable over the closest prior art: Nagasaki et al. (US 20030215701). Nagasaki et al. discloses aminoquinoxalines with the generic formula in above ¶8, but fails to disclose any monomer species as recited in claims 6-9 and 11-20.

Claims 21-24 allowable over the closest prior art: Nagasaki et al. (US 20030215701). Nagasaki et al. discloses polyaminoquinoxalines with the following generic formula (Abs.) structurally different from the claimed invention in claims 21-24, wherein the quinoxaline moiety are one the main chain with –NH-R-NH- or -NH-R- (R can't be H):

In which R<sup>1</sup> and R<sup>2</sup> each independently represent a hydrogen atom, a hydroxyl group, a phenyl group, a substituted phenyl group, a biphenyl group, a substituted biphenyl group, a thienyl group, a substituted thienyl group, a naphthyl group, a substituted naphthyl group, a pyrrolyl group, a furyl group, a substituted furyl group, an alkyl group, an alkoxy, or an alkoxy group; R<sup>3</sup> and R<sup>4</sup> each independently represent a hydrogen atom, an alkyl group, an alkoxy group, a cyano group, a phenyl group, a substituted phenyl group, a biphenyl group, a substituted biphenyl group, a thienyl group, a substituted thienyl group, a pyrrolyl group, a substituted pyrrolyl group, a furyl group, a substituted furyl group, a naphthyl group, or a substituted naphthyl group; R<sup>5</sup> represents a hydrogen atom, an alkyl group, an alkoxy group, an acetyl group, a cyano group, a phenyl group, a substituted phenyl group, a biphenyl group, a substituted biphenyl group, a thienyl group, a substituted thienyl group, a pyrrolyl group, a substituted pyrrolyl group, a naphthyl group, or a substituted naphthyl group; and n is a positive integer of not less than three. The polymers have excellent thermal resistance, permit easy control of the electrochemical oxidation-reduction potential thereof, have a very narrow band gap of themselves, and have strong fluorescent characteristics.



### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANE FANG whose telephone number is (571)270-7378. The examiner can normally be reached on Mon.-Thurs. 8 a.m. to 6:30 p.m. EST..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sf

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796